Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A method of fabricating a semiconductor device comprising the steps of:

selecting a wavelength for a laser beam such that the laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

forming an amorphous semiconductor film having an upper surface;

forming a first crystalline region by irradiating a laser beam having the selected wavelength to a first region of the upper surface of the amorphous semiconductor film by relatively moving the laser beam in a first direction with respect to the first region of the amorphous semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating the laser beam having the selected wavelength to a second region of the upper surface of the amorphous semiconductor film including a portion of the first crystalline region by relatively moving the laser beam in a direction parallel to the first direction with respect to the second region of the amorphous semiconductor film;

wherein:

[[a]] the selected wavelength of the laser beam falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the first direction.~~

2. (Currently Amended) A method of fabricating a semiconductor device comprising the steps of:

selecting a wavelength for a laser beam such that the laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

forming an amorphous semiconductor film having an upper surface;

forming a first crystalline region by irradiating a laser beam having the selected wavelength and having a shape at an irradiated face or a vicinity thereof in a linear or a rectangular shape to a first region of the upper surface of the amorphous semiconductor film by relatively moving the laser beam in a first direction with respect to the first region of the upper surface of the amorphous semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating the laser beam having the selected wavelength to a second region of the upper surface of the amorphous semiconductor film including a portion of the first crystalline region by relatively moving the laser beam in a direction parallel to the first direction with respect to the second region of the upper surface of the amorphous semiconductor film;

wherein:

[[a]] the selected wavelength of the laser beam falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the first direction.~~

3. (Currently Amended) A method of fabricating a semiconductor device comprising the steps of:

selecting a wavelength for a laser beam such that the laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

forming an amorphous semiconductor film having an upper surface;

forming a first crystalline region by irradiating a laser beam having the selected wavelength and having a shape at an irradiated face or a vicinity thereof in a linear or rectangular shape to a first region of the upper surface of the amorphous semiconductor film by relatively moving the laser beam in a short direction of the laser beam with respect to the first region of the upper surface of the amorphous semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating the laser beam having the selected wavelength to a second region of the upper surface of the amorphous semiconductor film including a portion of the first crystalline region by

relatively moving the laser beam in the short direction of the laser beam with respect to the second region of the upper surface of the amorphous semiconductor film;

wherein:

[[a]] the selected wavelength of the laser beam falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the short direction of the laser beam.~~

4. (Currently Amended) A method of fabricating a semiconductor device comprising:

a first step of selecting a wavelength for a laser beam such that the laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

a [[first]] second step of forming an amorphous semiconductor film having an upper surface;

a ~~second~~ third step of forming a first crystalline semiconductor film by partially crystallizing the upper surface of the amorphous semiconductor film by a heating treatment; and

a [[third]] fourth step of forming a second crystalline semiconductor film by irradiating a laser beam having the selected wavelength to the crystalline semiconductor film;

wherein the [[third]] fourth step comprises the steps of:

forming a first crystalline region by irradiating the laser beam having the selected wavelength to a first region of the first crystalline semiconductor film by relatively moving the laser beam in a first direction with respect to the first region of the first crystalline semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating the laser beam having the selected wavelength to a second region of the first crystalline semiconductor film including a portion of the first crystalline region by relatively moving the laser beam in a direction parallel to the first direction with respect to the second region of the first crystalline semiconductor film; and

wherein:

[[a]] the selected wavelength of the laser beam falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with ~~only~~ a portion of the second region of the upper surface. ~~along the first direction.~~

5. (Currently Amended) A method of fabricating a semiconductor device comprising:

a first step of selecting a wavelength for a laser beam such that the laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

a [[first]] second step of forming an amorphous semiconductor film having an upper surface;

a ~~second~~ third step of forming a first crystalline semiconductor film by partially crystallizing the upper surface of the amorphous semiconductor film by a heating treatment; and

a [[third]] fourth step of forming a second crystalline semiconductor film by irradiating a laser beam having the selected wavelength and having a shape at an irradiated face or a vicinity thereof in a linear or a rectangular shape to the first crystalline semiconductor film;

wherein the [[third]] fourth step comprises the steps of:

forming a first crystalline region by irradiating the laser beam having the selected wavelength to a first region of the first crystalline semiconductor film by relatively moving the laser beam in a first direction with respect to the first region of the first crystalline semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating the laser beam having the selected wavelength to a second region of the first crystalline semiconductor film including a portion of the first crystalline region by relatively moving the laser beam in a direction parallel to the first direction with respect to the second region of the first crystalline semiconductor film; and

wherein:

[[a]] the selected wavelength of the laser beam falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the first direction.~~

6. (Currently Amended) A method of fabricating a semiconductor device comprising:

a first step of selecting a wavelength for a laser beam such that the laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

a [[first]] second step of forming an amorphous semiconductor film having an upper surface;

a ~~second~~ third step of forming a first crystalline semiconductor film by partially crystallizing the upper surface of the amorphous semiconductor film by a heating treatment; and

a [[third]] fourth step of forming a second crystalline semiconductor film by irradiating a laser beam having the selected wavelength and having a shape at an irradiated face or a vicinity thereof in a linear or a rectangular shape to the first crystalline semiconductor film while relatively moving the laser beam in a short direction of the laser beam with respect to the first crystalline semiconductor film;

wherein the [[third]] fourth step comprises the steps of:

forming a first crystalline region by irradiating the laser beam having the selected wavelength to a first region of the first crystalline semiconductor film by relatively moving the laser beam in the short direction of the laser beam with respect to the first region of the first crystalline semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating the laser beam having the selected wavelength to a second region of the first crystalline semiconductor film including a portion of the first crystalline region by relatively moving the laser beam in the short direction of the laser beam with respect to the second region of the first crystalline semiconductor film; and

wherein:

[[a]] the selected wavelength of the laser beam falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the short direction of the laser beam.~~

7. (Original) The method of fabricating a semiconductor device according to claim 1, wherein a crystalline performance of the first crystalline region, a crystalline performance of the

second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

8. (Original) The method of fabricating a semiconductor device according to claim 2, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

9. (Original) The method of fabricating a semiconductor device according to claim 3, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

10. (Original) The method of fabricating a semiconductor device according to claim 4, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

11. (Original) The method of fabricating a semiconductor device according to claim 5, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

12. (Original) The method of fabricating a semiconductor device according to claim 6, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

13. (Previously Presented) The method of fabricating a semiconductor device according to claim 1, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

14. (Previously Presented) The method of fabricating a semiconductor device according to claim 2, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

15. (Previously Presented) The method of fabricating a semiconductor device according to claim 3, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

16. (Previously Presented) The method of fabricating a semiconductor device according to claim 4, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

17. (Previously Presented) The method of fabricating a semiconductor device according to claim 5, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

18. (Previously Presented) The method of fabricating a semiconductor device according to claim 6, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

19. (Previously Presented) The method of fabricating a semiconductor device according to claim 1, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

20. (Previously Presented) The method of fabricating a semiconductor device according to claim 2, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

21. (Previously Presented) The method of fabricating a semiconductor device according to claim 3, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

22. (Previously Presented) The method of fabricating a semiconductor device according to claim 4, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

23. (Previously Presented) The method of fabricating a semiconductor device according to claim 5, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

24. (Previously Presented) The method of fabricating a semiconductor device according to claim 6, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

25. (Previously Presented) The method of fabricating a semiconductor device according to claim 1, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

26. (Previously Presented) The method of fabricating a semiconductor device according to claim 2, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

27. (Previously Presented) The method of fabricating a semiconductor device according to claim 3, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

28. (Previously Presented) The method of fabricating a semiconductor device according to claim 4, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

29. (Previously Presented) The method of fabricating a semiconductor device according to claim 5, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

30. (Previously Presented) The method of fabricating a semiconductor device according to claim 6, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

31. (Withdrawn – Currently Amended) A method of fabricating a semiconductor device comprising the steps of:

selecting a first wavelength for a first laser beam such that the first laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

selecting a second wavelength for a second laser beam such that the second laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

forming an amorphous semiconductor film having an upper surface;

forming a first crystalline region by irradiating a first region of the upper surface of the amorphous semiconductor film with a first laser beam having the first selected wavelength by relatively moving the first laser beam in a first direction with respect to the first region of the amorphous semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating a second region of the upper surface of the amorphous semiconductor film including a portion of the first crystalline region with a second laser beam having the second selected wavelength by relatively moving the second laser beam in a direction parallel to the first direction with respect to the second region of the amorphous semiconductor film;

wherein:

[[a]] the first selected wavelength of the first laser beams falls in a range of 370 nm through 650 nm,

[[a]] the second selected wavelength of the second laser beams falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the first direction.~~

32. (Withdrawn) A method of fabricating a semiconductor device according to claim 31, wherein:

a first laser beam has a shape at an irradiated face or a vicinity thereof in a linear or a rectangular shape

a second laser beam has a shape at an irradiated face or a vicinity thereof in a linear or a rectangular shape

33. (Withdrawn – Currently Amended) A method of fabricating a semiconductor device comprising the steps of:

selecting a first wavelength for a first laser beam such that the first laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

selecting a second wavelength for a second laser beam such that the second laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

forming an amorphous semiconductor film having an upper surface;

forming a first crystalline region by irradiating a first region of the upper surface of the amorphous semiconductor film with a first laser beam having the first selected wavelength and having a shape at an irradiated face or a vicinity thereof in a linear or rectangular shape by relatively moving the first laser beam in a short direction of the first laser beam with respect to the first region of the upper surface of the amorphous semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating a second region of the upper surface of the amorphous semiconductor film including a portion of the first crystalline region with a second laser beam having the second selected wavelength and having a shape at an irradiated face or a vicinity thereof in a linear or rectangular shape by relatively moving the second laser beam in the short direction of the second laser beam parallel to the short direction of the first laser beam with respect to the second region of the upper surface of the amorphous semiconductor film;

wherein:

[[a]] the first selected wavelength of the first laser beams falls in a range of 370 nm through 650 nm,

[[a]] the second selected wavelength of the second laser beams falls in a range of 370 nm through 650 nm,

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the short direction of the first and the second laser beams.~~

34. (Withdrawn – Currently Amended) A method of fabricating a semiconductor device comprising:

a first step of selecting a first wavelength for a first laser beam such that the first laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

a second step of selecting a second wavelength for a second laser beam such that the second laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

a [[first]] third step of forming an amorphous semiconductor film having an upper surface;

a ~~second~~ fourth step of forming a first crystalline semiconductor film by partially crystallizing the upper surface of the amorphous semiconductor film by a heating treatment; and

a [[third]] fifth step of forming a second crystalline semiconductor film by irradiating the crystalline semiconductor film with a first laser beam having the first selected wavelength and a second laser ~~beams~~ beam having the second selected wavelength;

wherein the [[third]] fifth step comprises the steps of:

forming a first crystalline region by irradiating a first region of the first crystalline semiconductor film with the first laser beam having the first selected wavelength by relatively moving the first laser beam in a first direction with respect to the first region of the first crystalline semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating a second region of the first crystalline semiconductor film including a portion of the first crystalline region with the second laser beam having the second selected wavelength by relatively moving the second laser beam in a direction parallel to the first direction with respect to the second region of the first crystalline semiconductor film; and

wherein:

[[a]] the first selected wavelength of the first laser beams falls in a range of 370 nm through 650 nm,

[[a]] the second selected wavelength of the second laser beams falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the first direction.~~

35. (Withdrawn) A method of fabricating a semiconductor device according to claim 34, wherein:

a first laser beam has a shape at an irradiated face or a vicinity thereof in a linear or a rectangular shape

a second laser beam has a shape at an irradiated face or a vicinity thereof in a linear or a rectangular shape.

36. (Withdrawn – Currently Amended) A method of fabricating a semiconductor device comprising:

a first step of selecting a first wavelength for a first laser beam such that the first laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

a second step of selecting a second wavelength for a second laser beam such that the second laser beam is absorbed more by an amorphous semiconductor film than by a crystalline semiconductor film;

a [[first]] third step of forming an amorphous semiconductor film having an upper surface;

a ~~second~~ fourth step of forming a first crystalline semiconductor film by partially crystallizing the upper surface of the amorphous semiconductor film by a heating treatment; and

a [[third]] fifth step of forming a second crystalline semiconductor film by irradiating the first crystalline semiconductor film with first and second laser beams having, respectively, the first and second selected wavelengths and having a ~~liner~~ linear shape, a rectangular shape or the combination of a ~~liner~~ linear shape and a rectangular shape at an irradiated face or a vicinity thereof while relatively moving the first and second laser beams in a short direction of the laser beam with respect to the first crystalline semiconductor film;

wherein the [[third]] fifth step comprises the steps of:

forming a first crystalline region by irradiating a first region of the first crystalline semiconductor film with the first laser beam having the first selected wavelength by relatively moving the first laser beam in the short direction of the first laser beam with respect to the first region of the first crystalline semiconductor film; and

after forming the first crystalline region, forming a second crystalline region by irradiating a second region of the first crystalline semiconductor film including a portion of the first crystalline region with the second laser beam having the second selected wavelength by relatively moving the second laser beam in the short direction of the second laser beam parallel to the short direction of the first laser beam with respect to the second region of the first crystalline semiconductor film; and

wherein:

[[a]] the first selected wavelength of the first laser beams falls in a range of 370 nm through 650 nm,

[[a]] the second selected wavelength of the second laser beams falls in a range of 370 nm through 650 nm, and

the first region of the upper surface of the semiconductor film overlaps with only a portion of the second region of the upper surface. ~~along the short direction of the first and the second laser beams.~~

37. (Withdrawn) The method of fabricating a semiconductor device according to claim 31, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

38. (Withdrawn) The method of fabricating a semiconductor device according to claim 33, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

39. (Withdrawn) The method of fabricating a semiconductor device according to claim 34, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

40. (Withdrawn) The method of fabricating a semiconductor device according to claim 36, wherein a crystalline performance of the first crystalline region, a crystalline performance of the second crystalline region and a crystalline performance of a region overlapped with the first crystalline region and the second crystalline region are the same.

41. (Withdrawn) The method of fabricating a semiconductor device according to claim 31, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

42. (Withdrawn) The method of fabricating a semiconductor device according to claim 33, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

43. (Withdrawn) The method of fabricating a semiconductor device according to claim 34, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

44. (Withdrawn) The method of fabricating a semiconductor device according to claim 36, wherein the semiconductor device is a liquid crystal display apparatus or an EL display apparatus.

45. (Withdrawn) The method of fabricating a semiconductor device according to claim 31, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type

display, a personal computer, a DVD player, an electronic book and a portable information terminal.

46. (Withdrawn) The method of fabricating a semiconductor device according to claim 33, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

47. (Withdrawn) The method of fabricating a semiconductor device according to claim 34, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

48. (Withdrawn) The method of fabricating a semiconductor device according to claim 36, wherein the semiconductor device is employed on a device selected from the group consisting of: a portable telephone, a video camera, a digital camera, a projector, a goggle type display, a personal computer, a DVD player, an electronic book and a portable information terminal.

49. (Withdrawn) The method of fabricating a semiconductor device according to claim 31, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

50. (Withdrawn) The method of fabricating a semiconductor device according to claim 33, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

51. (Withdrawn) The method of fabricating a semiconductor device according to claim 34, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.

52. (Withdrawn) The method of fabricating a semiconductor device according to claim 36, wherein the laser beam is a laser beam selected from the group consisting of: a second harmonic of a YAG laser, a second harmonic of a YVO_4 laser and a second harmonic of a YLF laser.